

REMARKS

Regarding the objection to the term “wherein” in claims 8, 11, 22 and 25, Applicants have amended the claims to positively recite the “computing” step.

Regarding the objections to claims 1, 10, 11, and 29, and to claims 7, 9, 21 and 23, Applicants have amended the claims to overcome the objections.

Regarding the §101 rejections to claims 15, 22 and 25, Applicants have amended the claims to recite that the processor is configured to perform the operations further recited therein. Proper English grammar dictates that the noun “processor” is the subject of the action verb phrases “coupled to the memory” and “configured to.”

Regarding the §101 rejections to claims 1, 8 and 11, Applicants have amended the claims to recite that they are performed by a computer and to add the step of specifying a line system design based on the assigned bandwidths and the routed demands, which is the tangible, concrete, and useful result of the inventive line system design methodology and apparatus. Support for the amendment is found throughout the specification. See page 7, line 26, through page 8, line 11.

Regarding claim 29, the claims has been amended to recite “computer readable storage medium.”

Regarding the §112, first paragraph, rejections, Applicants respectfully traverse certain of such rejections for at least the following reasons.

To answer the Examiner’s query with respect to claims 9 and 23, reference to the specification at page 11, starting at line 17, illustratively indicates that “polynomially computable” may mean that the computation of the graph coloring operation is polynomially solvable (in the case of particular circular line systems).

To answer the Examiner’s query with respect to claims 1, 8, 11, 15, 22, 25 and 29, reference to the specification at page 5, lines 20-28, illustratively indicates that demands may be routed as follows:

The set of demands that are to be supported by the line system is denoted by D , where each demand in D is between two nodes of the system. For a linear line system, a demand is thus an interval $[x_1, x_2]$, $x_1 < x_2$ such that x_1 and x_2 are the coordinates of two nodes on the number line. For a circular line system, a demand denoted by the pair $[x_1,$

$x_2]$, $x_1 < x_2$ can be routed either on the clockwise or anti-clockwise arc connecting node with coordinate x_1 to node with coordinate x_2 . We also represent a demand by a tuple (i, j) , $i \leq j$ where, for a linear line system, the demand (i, j) must be routed through links $e_i, e_{i+1} \dots, e_j$. For a circular line system, the demand (i, j) can be routed either clockwise or anti-clockwise. In the former routing, the demand uses links $e_i, e_{i+1} \dots, e_j$, and in the latter routing, it uses links $e_{j+1}, e_{j+2} \dots, e_n, e_1, e_2 \dots, e_{i-1}$.

To answer the Examiner's query with respect to claims 2, 14 and 15, the term "color" is defined in the independent claims from which the subject claims respectively depend. That is, each independent claim recites that "colors represent bandwidths." Thus, "cost" in this context is a cost associated with a bandwidth. Thus, a "higher set" in this context is a higher set of bandwidths. The specification describes such costs and bandwidth sets.

With respect to claims 4, 15, 18, 22 and 25, Applicants have amended the claims to overcome the further §112, first paragraph, rejections.

Regarding the §102 rejection of claims 1-29 based of Arquie, Applicants assert that the reference clearly fails to teach or suggest each and every limitation of the claims.

By way of example only, Arquie does not disclose the independent claim feature of representing a line system design as a graph in accordance with a graph coloring operation wherein colors represent bandwidths such that bandwidths are assigned and the one or more demands are routed so as to attempt to achieve a minimum total design cost. The Office Action cites paragraph [0013] of Arquie for the purpose of suggesting that "adding color [] such that particular performance ranges are essentially color-coded" teaches or suggests the claim limitation. However, this portion of Arquie completely fails to teach or suggest the claim limitation. That is, Arquie mentions nothing about colors representing bandwidths such that bandwidths are assigned and the one or more demands are routed so as to attempt to achieve a minimum total design cost.

In addition, Applicants assert that the dependent claims recite separately patentable subject matter.

In view of the above, Applicants believe that claims 1-29 are in condition for allowance, and respectfully request withdrawal of the various objections and rejections.

Respectfully submitted,



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